

网络、通信与安全

## 一种计算话务量的进化神经网络方法

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**摘要** 话务量是度量用户使用电话设备频繁程度的一个重要参量,由于目前话务分布呈现出显著的立体性、多业务性和非泊松流等特点,不能直接应用欧兰 B 公式进行计算。为此,从计算智能出发提出一种基于PSO算法的进化神经计算方法,主要包括话务量及其相关参量的获取、神经网络结构的优化、基于PSO算法的网络训练,以及话务量计算等步骤。通过对河北省某市小灵通业务的详细研究,利用近半年来的话务量与无线阻塞率、来话接通率和掉话率等参量构成的样本信息进行建模,所计算的话务量精度高,表明其方法切实可行且效果显著。

**关键词** [话务量](#) [进化神经计算](#) [PSO](#) [网络结构优化](#)

分类号

## Method of evolutionary neural computation on traffic of calls

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### Abstract

The traffic of calls is a very important parameter in degree measurement for telephone equipment frequency used by users. The distribution of the traffic of calls presents the characteristics of tridimensionality, more services and non-Poisson flow, in this case, the Erlang B formula can't be applied to compute wireless block ratio directly. Therefore, according to the computational intelligence, a new method of evolutionary neural computation based on Particle Swarm Optimization (PSO) is presented to analyze and forecast the traffic of calls, the main process includes acquiring data and normalizing, such as traffic of calls, optimizing the structure of neural network, training network by PSO, calculating traffic of calls. By researching on service of personal handy phone call about a networks telecommunication company in Hebei province, the calculating model is set up with the sample information, which includes wireless block ratio, call completing ratio, call dropping ratio. The accuracy of the traffic of calls calculated by the model is very high, which shows the effect of the method is remarkable.

**Key words** [traffic of calls](#) [evolutionary neural computation](#) [Particle Swarm Optimization \(PSO\)](#) [network structure optimization](#)

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